MANKIND

Official Journal of the Anthropological Society of New South Wales

VOL. I, No. 1 MARCH, 1931 Price: One Shilling (Postage Extra)

PUBLISHED TRI-ANNUALLY.

ASSOCIATE EDITORS: W. W. THORPE AND KEITH KENNEDY.

The Anthropological Society of New South Wales as such is not responsible for any opinion or declaration published in this magazine, by whomsoever expressed, unless specifically stated to be so by the editors.

All communications, MSS., and proposed advertisements to be addressed to The Editors,

c/o The Anthropological Society of N.S.W.,
c/o The Australian Museum,
College Street, Sydney,
N.S.W., Australia.

Persons interested in the work of the Society, and those desirous of subscribing to MANKIND, please address correspondence to the Hon. Secretary.

CONTENTS.

	PAGE.
The Study of Man	1
Proceedings of the Society	2
Our Cover Design	5
Historical: Anthropology in New South Wales	5
Work of the 1902 "Ethnological Committee"	6
"Early References to Aboriginal Rock Carvings," by W. W. Thorpe	7
"The Ancient Four-Note Musical Scale of the Maoris," by Keith Kennedy	11
"An Old Ceremony Ground of the Cammeray Tribe," by W. J. Walton	14
"The Extinct Tasmanians," by J. S. Falkinder	16
Elements of Flaking and Chipping	19
"Aboriginal Methods of Assassination," by W. W. Thorpe	20
"Primitive Art in Australia," by B. L. Hornshaw	21
Anthropological Notes, News and Personalia	23

The Study of Man

WHEN the first European navigators reached the Great Southern Land now known as the continent of Australia, they found it occupied by an aboriginal race still in the stone-age culture, and living in an almost similar condition to that of our pre-historic ancestors who existed in Europe during Palæolithic times. Since the settlement of the country the Aborigines have dwindled down to a mere fraction of their former number, and, unless steps are taken to preserve them, will die out altogether. Even if they do not become extinct it is only a matter of time when they will give up their ancient customs and take on European ways of living.

Here in Australia we have a unique opportunity for studying primitive man at first hand, but this opportunity will

pass away in the course of a very few years, and when gone will be lost for all time. At the present time, in isolated parts of the interior, can still be seen men making and using stone implements very like those found in the river drifts and cave deposits of pre-historic Europe. The spear-thrower or wommerah—an instrument known to the cave men of Aurignacian times—can be seen still in use; also that strange weapon the boomerang, in its many forms, varying from a bent flattened stick to the specialized beaked variety.

As well as their weapons and utensils, the native arts and crafts are well worth studying. Most people are under the impression that the Aborigines are not clever or artistic, but when their art-work is examined we find a surprising variety that has taken centuries to evolve, and the motives they employ could, with advantage, be adopted to form the basis of an Australian school of decorative art.

Apart from material culture the social aspect of the Aborigines is very interesting, and their tribal organization, totemism, religion and folk lore present a fascinating field of study.

Much good work has been accomplished in Australia by anthropologists of the past, but there is still much to be done. With the object of carrying on investigation, and creating public interest in the study of man, primarily in Australasia and the Pacific Islands, the Anthropological Society of New South Wales was formed in 1928. It has already done a considerable amount of field-work and research and drawn together in co-operation those attracted by anthropology—the newest of the sciences. In publishing its official organ, MANKIND, the Society intends putting on record experiences and knowledge gained by members and others interested in the subject, and also to announce advances and discoveries made in different parts of the world.

Proceedings of the Society

FEBRUARY 17, 1931

AT the General Meeting held on the above date in the Lecture Room of the Australian Museum, the President (Dr. Charles Anderson) occupied the chair. After the minutes of the previous meeting were read and confirmed, the Rev. Father Leo Hayes and Mr. Ernest Cecil Sayers were duly elected members of the Society, and the candidature of Mr. Ferdinand Bender was presented. It was unanimously resolved that the Rev. E. R. B. Gribble, of Yarrabah, Queensland, be elected a Corresponding Member of the Society, after which the President announced that the Committee had decided to issue a journal of the Society's Proceedings and other information pertaining to anthropology.

The Chairman then called upon Mr. J. H. L. Waterhouse to deliver a lecturette on certain phases of native life in the Solomon Islands.

After briefly describing the fertility of Bougainville Island of that group, its roads and topographical features, the lecturer proceeded to explain the totems of the Siwai District and their social importance. Two bird totems—the eagle and hornbill—predominate, although other birds and animals are represented. The gongs, or drums, of this district resemble somewhat the Fijian "lali," but have smaller aper-

ture. They are very heavy instruments, and sets of ten to twenty are housed in structures set apart for the men folk. They are struck with a stick, end on, and not beaten. Drums are used mostly for signalling, the sound can often be heard seven miles away. The ruling prices for native commodities are conveyed in this manner from village to village. Ownership of the drums rests with the chief.

The custom of cremation in the Siwai District was also described. These rites are carefully and consistently performed, and the time set apart synchronises with the rising of the morning star. The victim of an accident, or the body of a suicide, is cremated at daybreak. Relatives of the dead person walk around the fire singing a dirge, protecting themselves from the intense heat with mats, which they carry for the occasion. Prior to a cremation a great deal of preparation is necessary. Only one kind of timber (called "ho") must be used, and the height of the pyre is governed by the social status of the deceased. At the close of the meeting Mr. Waterhouse exhibited a number of objects of native handiwork, including some very fine stone implements.

Mr. Robert Turner then read a paper on the "elouera" or chipped-back knife, an artefact found in middens left by the aborigines of New South Wales. The lecturer brought forward almost unassailable evidence that the V-shaped edge was the "working" edge of the implement, supporting his contention with an array of specimens An interesting discussion followed, in which Messrs Kennedy, Halliday and Thorpe participated. Mr. Halliday explained the peculiarities of some chipped-back implements including one with a *ground* blade.

Mr. W. W. Thorpe exhibited and described several of the larger kind of stone implements, hand-axes, which he gathered from middens on the South Coast during his Christmas vacation: also a fine skull of an aboriginal male, found at Murramurang, and presented to the Australian Museum by Mr. Carlyle Greenwell.

Mr. C. W. Heyde exhibited and described two stone and two bone implements recently unearthed at Port Hacking.

Each speaker was well received, and accorded a vote of thanks, carried by acclamation.

MARCH 17, 1931

At the General Meeting held on the above date, in the Lecture Room of the Australian Museum, the President (Dr. Charles Anderson) occupied the chair. After the minutes of the previous meeting were read and confirmed Mr. Ferdinand Bender was duly elected a member of the Society. The President called upon Dr. Raymond Firth to deliver his lecture entitled "White Man and Native in the Eastern Solomons." Dr. Firth opened his discourse by describing the discovery of the Group by Mendana in 1567. After passing by Ongtong-Java, the navigator made his base at the island of Ysabel. While there a brigantine was built, and Mendana conducted an inter-insular investigation of the Group. Returning to Peru, he organized a second expedition, but unfortunately lost his life at Santa Cruz. The behaviour of Mendana and his men on the first voyage did not tend to secure the confidence of the natives. He kidnapped some of them to ensure a food supply, and also to act as interpreters when journeying from one island to another. After Mendana left, the Group was not visited by Europeans for one hundred years.

The lecturer called attention to the long intervals between the visits of steamers to-day and the readiness with which the white residents congregate at Tulagi, when one is due. At present each island of the Group is under the control of a District Officer, but no serious attempt has been made to master the language. All conversation is conducted in pidgin English. The Group is not over-populated. It is estimated that there are about 150,000 natives, being about 10 or 12 to the square mile. The evidence of decimation is apparent by the number of abandoned villages, indicated by groves of coconut palms. The Solomon islanders are, for the most part, Melanesians, but some of the outlying islands are populated by natives with a Polynesian strain. The eastern islanders are the fairer, being of a light bronze complexion, while some of the western folk are distinctly black. The presence of the Polynesian element in the "outliers" is thought to have been brought about by castaways from the eastern archipelagoes. There are definite differences also between the coastal, or "saltwater" men, and the "bushmen," or dwellers of the interior. The former, who spend a great deal of their time on the water, are of better physique and more intelligent. Trading is carried on between these peoples, the bush folk bringing vegetable products and receiving fish and goods in exchange. These transactions are generally in the hands of the women, while the men on either side stand armed in readiness to give battle should any dispute arise. On the north and west of Malaita, the trading takes place on artificial islands built by the coastal people. Taro is one of the principal foods. Sago is not largely used. Fish are taken with spear, bow and arrow and net. In some parts an ingenious kite with a cobweb-bait is used. Land tenure is curious. Often the coconut and other trees do not belong to the land owner, and are handed down, often changing ownership many times without regard to the land possessor.

Dr. Firth, in continuing his lecture, considered the effects of native contact with the whites. Education was entirely in the hands of the missionaries, the Melanesian Board of Missions teaching their adherents by using the Mota language, which has its origin in the Banks Group. The desire for education is very general. Native labour for the plantations is largely requisitioned. The native, after having the conditions of employment explained to him, signs on, or "makes paper," at Tulagi, the seat of the Administration. The interest of the native in this regard is paramount. He is paid £1 per month, and has issued to him tobacco, soap, *lava lavas* (clothing), *et cetera*. It is apparent that recruiting upsets the social balance of the village. Work such as clearing and canoe building is partly neglected, owing to the absence of men. Marriage is often delayed and marital separation causes strife between the parties concerned when the men folk return after their period of indenture. The native also is more sophisticated on coming back to his village and does not respect the council of elders who are the exponents of tribal law and custom.

A fine series of slides showing different types of natives, habitations, and canoes, were projected during the discourse.

Mr. E. W. P. Chinnery and others took part in the discussion which followed. A vote of thanks was accorded Dr. Firth at the close of the meeting.

Our Cover Design

THE cover design of MANKIND depicts a Maori warrior performing a war dance. In his hands he is flourishing a "tewhatewha," a hatchet-headed weapon used by the Maories. Opposing him is an aborigine of Australia in the act of hurling a boomerang. These sketches were derived from Elsdon Best's "Games and Pastimes of the Maori," and N. W. Thomas's "Aborigines of Australia." A *kaiva kuku* mask from Papua occupies the central foreground, which is flanked by two views of a scarab of Usertsen I, Twelfth Dynasty, Egypt. The latter is from Percy Newberry's work on the subject. To the left centre is a stone-bladed adze from Central British Papua, and on the right a hafted stone axe from Queensland. The circular object at the top of the design is a breast ornament of clam and turtle shell from Santa Cruz, South Pacific. The Society is indebted to Miss E. A. King who prepared the original drawing at a very nominal charge, and to Mr. H. J. Wright, who generously met the cost of the process block.

Historical

ANTHROPOLOGY IN NEW SOUTH WALES

ON the fifth of December, 1895, at a public meeting, convened at the Royal Exchange, Sydney, the Anthropological Society of Australasia was formed. Eight months later this Society published the first number of *The Australasian Anthropological Journal*, a monthly magazine edited by the founder of the Society, Dr. Alan Carrol. The list of patrons published, headed by His Excellency the Right Hon. Viscount Hampden, Governor of New South Wales, included the Governors of Victoria, Queensland, Tasmania, South Australia, Western Australia, New Zealand, Fiji and New Guinea. On the 21st February, 1898, the Society changed the name of its journal to *The Science of Man*. The following year the Government of New South Wales granted a sum of £100 to the Society, making it possible to reduce the price of the journal from one shilling to sixpence. Issue 21st August, 1899, of the journal announced the Chief Patron as His Excellency Earl Beauchamp, Governor-General of New South Wales. In the same year Her Majesty Queen Victoria, after having the valuable work done by the Society brought under her notice by His Excellency the Governor, conferred the right to use the word "Royal," and the Society from thenceforth was called The Royal Anthropological Society of Australasia.

After Dr. Alan Carroll died on 17th April, 1911, a meeting was called at the Society's Rooms, 38 Elizabeth Street, when it was decided to continue the Society's work on the same lines as formerly. The Rev. J. Hargrave, who had been acting as manager for Dr. Carroll for a period of two years before his death, was appointed Director and Manager, and Mr. D. Izett, F.R.A.S., became editor of the journal. The Society continued its work up to November, 1913, when the last issue of *The Science of Man* was published, after which the Society went out of existence.

In the year 1928 Mr. W. W. Thorpe, Ethnologist of the Australian Museum, and Mr. C. C. Towle discussed the advisability of forming a new Anthropological Society. After due consideration it was decided to communicate with several gentlemen interested in the matter, with the result that Professor A. R. Radcliffe Brown, Professor A. N. Burkitt, Mr. M. S. Stanley and Mr. W. J. Enright replied favourably to the scheme. A preliminary meeting was held in Mr. Thorpe's room at the Australian Museum on 2nd August, 1928, at which the constitution was discussed. A second meeting was held on 27th September, at which the draft of the Constitution and By-laws was presented by Mr. Thorpe and Mr. Towle. It was then agreed to call a meeting of all those known to be interested in anthropology, and so the first meeting of the present Society—The Anthropological Society of N.S.W.—was held at the Australian Museum on 16th October, 1928. Mr. Thorpe acted as convener of all meetings, and his efforts, with the interest and help of Dr. Charles Anderson, Director of the Australian Museum, helped to make the foundation of the Society a success.

The Society meetings are held monthly from February to October in the Lecture Hall of the Australian Museum, which has been kindly placed at the disposal of the Society by the Trustees of that institution.—K.K.

Work of the 1902 "Ethnological Committee"

DURING 1902 eight citizens of this State formed themselves into a "Committee" to collect information regarding the fast disappearing aborigines of New South Wales. This "Committee" continued its activities until 1909, when it seemed to lapse. The personnel was as follows: Robert Etheridge, Chairman; Colin J. McMaster, Robert McDonald, Hugh Langwell, Commissioners for Western Lands; John Vernon; W. A. Gullick, Government Printer; J. R. Holding; Percy E. Williams.

A circular letter was drawn up, and a series of helpful suggestions prepared. These were distributed amongst residents of the western districts, the result being that a large number of aboriginal artefacts found their way to the Australian Museum.

The circular letter read as follows:

Dear Sir:

The Aborigines of N.S. Wales having to all intents and purposes disappeared, at all events, in their pristine conditions, it is important, in the interests of science, that strenuous efforts be made to collect what information may yet be available concerning their history, their manners, their customs and their ceremonies; also, to search for their weapons of warfare and the chase, and their implements of domestic and ceremonial use before more of these valuable records of the early history of the Continent are further disseminated over the world and lost to the people of the State.

With this object in view a Committee has been formed consisting at present of [here follow the names already quoted] to invite the assistance and co-operation of those colonists whose long residence in the interior, and intercourse with the natives, have enabled them to acquire much valuable information, and who may have in their possession, or be able to obtain, aboriginal weapons and implements, which, comparatively valueless as solitary specimens scattered over the country, become of the greatest value when classified with others in the national collection, and thus made accessible for study and comparison to all interested in the ethnology of the ancient inhabitants of our adopted country.

Your name having been mentioned as one interested in the subject, I am directed to inform you that the Committee will esteem it a favour if you can assist in carrying out its scheme for the enrichment of the national collection of aboriginal objects in the Australian Museum.

Herewith I enclose a few suggestions made by the Curator of the Australian Museum

to guide in the search for articles of ethnological interest.

In conclusion, I may add that the cost of conveyance of specimens will be defrayed in Sydney.

I am, Dear Sir,

Yours faithfully,

PERCY E. WILLIAMS,

Hon. Sec.

Accompanying the circular are the "Suggestions" which have the same value to-day:

SUGGESTIONS FOR SYSTEMATIC SEARCH FOR ABORIGINAL WEAPONS AND ARTICLES OF CEREMONIAL AND DOMESTIC USE.

1. The aborigines of New South Wales having disappeared in their pristine condition, the only places that are likely to yield their remains are:
   (*a*) Graves.
   (*b*) Cave shelters.
   (*c*) Kitchen middens, cooking places, etc.
   (*d*) Surfaces bared by shifting sand.
2. In collecting such remains it is always advisable to note position of same in relation to cardinal points of the compass.
3. Locality, as exact as possible, is essential.
4. Kitchen middens, old camp refuse heaps, "blackfellows' ovens," and such like are often great store houses for stone implements and human remains.
5. Native quarries should be watched for; many instructive specimens can even now be picked up in such places.
6. Ascertain if the material of which objects are made is local or not.
7. Old inhabitants (white) should be consulted as to any knowledge of the use of objects, if at all out of the common.
8. A few "camps" are still in existence where genuine articles may be obtained, particularly if any old people be alive.
9. Articles in the course of manufacture and the raw material are great desiderata. The same remark applies to native food substances.
10. Carved trees from around "bora grounds" and graves are much to be desired. . . . .
11. Surveys and plans of "bora grounds" are much wanted. Perhaps surveyors having these grounds in their districts would kindly help the Committee in this respect.
12. In the case of native pigment drawings or rock carvings, photographs should always be obtained when possible, using every effort to avoid distortion of perspective.
13. In a general way hotel bars at times exhibit fine displays of aboriginal implements, and advice of these would be welcomed.
14. Weight or bulk should not prevent the collector from endeavouring to obtain objects of interest. In cases of very large objects the Central Committee might be advised.

The foregoing is supplied *in extenso*, not to give prominence to the Museum, but as a tribute to the foresight of the late Mr. Etheridge and his colleagues.

The reference to "dissemination over the world" had for its object the prevention of the exportation of aboriginal relics. This desire was attained later, when Mr. Etheridge induced the Federal Government to place an embargo on this traffic.—W.W.T.

Early References to Aboriginal Rock Carvings

(By W. W. THORPE.)*

PETROGLYPHS, or rock carvings, were noticed in the earliest days of white settlement. In a despatch from Governor Phillip to Lord Sydney dated at Sydney Cove, May 15th, 1788, the Governor stated: "In Botany Bay, Port Jackson and Broken Bay we frequently saw the figures of men, shields and fish roughly cut on the rocks; and on the top of a high mountain I saw the figure of a man in the attitude they put themselves in when they are going to dance, which was done much better than I had seen before; and the figure of a large lizard was sufficiently well executed to satisfy everyone what animal it was."

The second account is by the historian of Governor Phillip's "Voyage to Botany Bay," a work published in 1789.

* By permission of the Trustees of the Australian Museum.

"In all these excursions [to the west of the Port] of Governor Phillip and in the neighbourhood of Botany Bay and Port Jackson, the figures of animals, of shields and weapons, and even of men, have been seen carved on the rocks, roughly indeed, but sufficiently well to ascertain very fully what was the object intended. Fish were often represented, and in one place the form of a very large lizard was sketched out with tolerable accuracy; on the top of one of the hills the figure of a man in the attitude usually assumed by them when they begin to dance was executed in still superior style."

Another work by Captain Watkin Tench, also published in 1789, makes brief mention as follows: "On many of the rocks are also to be found delineations of the figures of men and birds very poorly cut."

In 1836 we have two references by Surveyor W. R. Govett. In an article in the *Saturday Magazine*, he writes: "From a point overlooking the Hawkesbury near the extremity of a ridge which divides the Cowan and Berowra Creeks, is a wide mass of flat rock, upon the surface of which figures of various descriptions as hands, arms, legs, men and animals were indented or scooped out in a variety of singular shapes."

A book also written by Govett and published in 1836 entitled "Sketches of New South Wales" contains an account of the carvings already referred to.

Passing on to the year 1847, the following is an extract from Angas' "Savage Life and Scenes": The most important of our rambles around the bays and rocky promontories of Port Jackson was the discovery (*sic*) of a new and remarkable feature connected with the history of the natives formerly inhabiting this portion of New South Wales. I refer to their carvings in outline, cut into the surface of flat rocks in the neighbourhood, and especially on the summits of the various promontories about the harbours and coast. Although these carvings exist in considerable numbers, covering all the flat rocks upon many of the headlands overlooking the water, it is a singular fact that up to the present time (1847) they appear to have remained unobserved: and it was not until my friend Mr. Miles first noticed the rude figure of a kangaroo cut upon the surface of a flat rock near Camp Cove that we were led to make a careful search for these singular and interesting remains of a people who are now nearly extinct."

The Mr. Miles referred to visited Australia during the 'forties, and published an article in the *Journal of the Ethnological Society* in London (1854). "About a dozen natives of the Sydney and Broken Bay tribes were encamped amongst the bushes on the margin of a freshwater lake close to Camp Cove, and from amongst them we selected Old Queen Gooseberry to be our guide, promising her a reward of flour and tobacco if she would tell us all she knew, and all that she had heard her father say respecting them." This testimony is summarized thus by Miles: "According to the statement of an aged and intelligent aboriginal, the widow of a former chief of the Port Jackson tribe, none but the priests or conjurors visited these sacred spots, except when mystic orgies were there performed—dances, human sacrifices, Paphian orgies, and settlements or adjustments of disputed questions amongst the tribes."

Returning again to the Angas account, Queen Gooseberry "likewise consented at last to guide us to several spots near the North Head, where she said the carvings existed in great numbers: as also impressions of hands upon the side of high rocks. With some difficulty we prevailed upon the old creature to venture with us into a whale boat; so with Queen Gooseberry for our guide we crossed to the North Head. After examining the flat rocks in every direction we found sufficient examples of these outlines to confirm at once the opinion that they were

executed by the aboriginal inhabitants, but at what period is quite uncertain. From the half obliterated state of many of them (although the lines are cut nearly an inch deep into the hard rock) and the fact that from several of them we were compelled to clear away soil and scrub of long continued growth, it is evident that they have been executed a very long time. At first we could not bring ourselves to believe that these carvings were the work of savages: and we conjectured that the figure of the kangaroo might have been work of some European; but when pursuing our researches further, we found all the most out-of-way and least accessible headlands adorned with similar carvings, and also the subjects represented indigenous objects—such as kangaroos, opossums, sharks, the hieleman or shield, the boomerang and, above all, the human figure in the attitude of the corrobory dances—we could come to no other conclusion than that they were of native origin. Europeans would have drawn ships, and horses, and men with hats upon their heads, had they attempted such a laborious and tedious occupation. Some of the figures measured 25 feet in length; and it is curious that the representations of the shield exactly corresponded to that used by the natives of Port Stephens at the present day. These sculptured forms prove that the New Hollanders exercise the arts of design; which has been questioned."

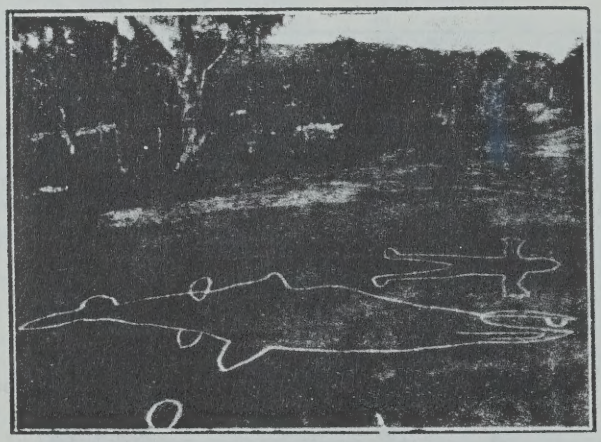
Returning once more to Miles, who, in 1854, wrote: "These carvings are generally on highland promontories, especially isthmuses and near water, which reminds us of the site chosen from the most ancient times." Miles attempted to link up Australian cultures with the ancient beliefs and practices. The title of his paper in the *Journal of the Ethnological Society* is "How Did the Natives of Australia Become Acquainted with the Demigods and Demonia, and with the Superstition of the Ancient Races?"

He continued: "On the flat summit of high mountain near Koon Cown Creek there is nearly half an acre covered with them." He also supplies a plate of figures at Pork Jackson, including a shark, a large fish, a boomerang, two humans with arms and

Rock Carving of Whale, Jibbon, Port Hacking, N.S.W.

legs spread, but no indication of sex, a bird without wings and a kangaroo."

In Waugh's Australian Almanac for 1858, G. F. Angas writes as follows: "Before concluding this brief sketch of a race of people now fast disappearing from the more thickly settled portions of this colony, it may be of interest to many of our readers to refer to the rude works of art still extant, which appear to have been executed by the aborigines previous to the arrival of the white man upon these shores. Transformed as the bays and promontories of Port Jackson have been by the improvements of civilisation, there may yet be found traces of the rude carvings or outline drawings of these people on many promontories and flat rocks about Middle Harbour, also on South Reef promontory, at Camp Cove, at Point Piper, at Mosmans, and also at Lane Cove, and several other places. The subjects represented are the human figure in the attitude of dancing; the hielaman, or shield; kangaroos, birds and flying squirrels, and various kinds of fish, intended no doubt for sharks and whales; some of the latter are 27 feet in length. Relative to these tracings or carvings upon the flat rocks or projecting headlands, their use or intention is now only legendary. The natives say that 'Blackfellow made them long ago,' and to convey an idea of antiquity, they hold up their fingers and hands, elevate their face, shut the eyes and say: 'Murrey —murrey—murrey—long time ago.' They agree in stating that the tribes did not reside on those spots, assigning as a reason 'too much dibble dibble walk about,' for they greatly fear meeting the evil spirit in their rambles, and, as before mentioned, are very unwilling to move away from their fires at night. They also state that these places where the carvings exist were all sacred to the doctors or conjurors and were in fact 'Koradjee' or 'priests' ground.' Some years ago, when there was still a remnant of the Sydney and Broken Bay tribes encamping around the harbour of Port Jackson, the author of this paper [Angas] entered fully into a minute search after these aboriginal carvings, and, in conjunction with the late Mr. Miles, discovered and made drawings and measurements of a great number, all of them occurring on headlands and promontories jutting out into the sea. Had they been the work



Rock Carving of Shark (?), Brookvale, N.S.W.

of Europeans they would have drawn ships and horses" [etc.].

In 1874 Mr. Gerard Krefft, Curator of the Australian Museum, wrote in a letter addressed to the Editor of *Nature*: "I noticed in one of your latest papers that some of your readers doubted the ability of the Australian, or other low savages, to sketch in the manner of the Vezere people [Aurignacian, Upper Palæolithic, Europe], and I made a copy of a few sketches still found in this neighbourhood engraved on rocks. They consist chiefly of fishes, whales, birds and a few men."

From 1874 onward scores of articles on rock carvings have been published. In 1899 Mr. W. D. Campbell brought out his masterly monograph entitled "The Rock Carvings of Part Jackson and Broken Bay." This was the most concise contribution to the history and descriptions of petroglyphs yet published. It was the result of a long continued research and patient labour extending practically from 1886 to 1899. The work is illustrated with 29 plates, and a map of the stations. The petroglyphs are portrayed to scale just as they are grouped together. The utmost care was taken by Mr. Campbell to ensure accuracy, the figures being drawn in the field on sectional paper, several visits being made to one group or figure, so as to obtain results as accurate as possible. Mr. Campbell is now a very old man. He lives in Queensland, and often has correspondence with the Australian Museum.

The illustrations are from process blocks the property of the Museum, the original plates being prepared by Mr. G. C. Clutton, of that institution.

The Ancient Four-Note Musical Scale of the Maoris

(By Keith Kennedy)

Music has often been called a universal language, but this statement is not correct, for there are actually many musical languages, or systems, in the world. Because of their differences in construction, the study of the musical systems used by various peoples is almost as important as the study of languages, when investigating racial migration and the spread of culture.

Like a language, a musical system can be adopted by one race from another, as in the case of the American negroes, who, by employing the European scale and harmony, have been able to attain great artistic heights in their modern spirituals. Two or more musical systems can be combined, as has happened with languages. A good example of this occurred when the Gipsies—an Aryan-speaking Indian race—entered Hungary during the 14th century, and blended their music with that of the Magyars, thereby creating a new musical system, which has since been modified, by Franz Liszt and other composers, to suit European requirements.

The notes sounded in music (which can be considered analogous to the words of a spoken language) make up the scale on which a particular musical system is founded. Scales vary according to the number of notes employed, and the intervals between them. Our modern European chromatic scale consists of an octave divided into twelve semitones. This grew out of the

heptatonic (seven note) scale,[1] which, in its turn, was arrived at independently through the evolution of two primitive scales—the pentatonic of five notes, and the tetrachord of four notes. Traces of the pentatonic scale can still be found in Europe,[2] and at the present time is used in China, amongst the Aborigines of Australia,[3] and in

Wooden Koauau.
Gisborne, Poverty Bay, New Zealand.

many other parts of the world. It is gapped, and grew into the pentatonic scale when the gaps were filled up with two extra notes. The tetrachord[4] is a group of four notes within the interval of a perfect fourth. It was the original scale of the ancient Greeks, who, by joining two tetrachords together, with the fourth note of the first and the first note of the second tetrachord overlapping, made a hepatonic scale. Like the pentatonic scale, various modes of the tetrachord are found in different parts of the world, and its occurrence in New Zealand is the subject of this article.

In the year 1925, through the courtesy of Mr. L. T. Griffin, who at the time was Acting Curator for the Auckland Museum,[5] I had the opportunity of playing on and studying the *koauaus* (Maori flutes) in the Museum collection. To gauge the pitch I had an English concert-pitch tuning fork; but the pitch is not absolutely essential; it is the number of notes and the intervals between them that cause one scale to differ from another.[6]

Before describing the results obtained it will be as well to give a short description of the *koauau*. It is a small instrument of the flute family, in the form of a cylinder of bone or wood open at both ends. Some specimens have a slight entasis or bulge in the middle or at the playing end. It belongs to the species of vertical flutes—that is, the enclosed column of air is vibrated by blowing across the rim of the cylinder, not across a lateral embouchure as with the European flute. There are three finger-holes pierced, so it is possible to play only four notes—one with all holes covered and three by lifting the fingers from each of the holes. It is not possible to over-blow and get the octave above, as can be done with the European flute. Measurements of a wooden *koauau* (see illustration) in my collection are: length $5\frac{3}{8}$ inches, diameter in centre $1\frac{1}{8}$ inches, diameter of bore at both ends $\frac{5}{8}$ inch.

The *koauau* is celebrated in Maori folk-lore,[7] and was highly prized, not only as a musical instrument, but as an heirloom, and as an ornament, being often worn suspended from the neck by a throng. Some of them have a shallow hole bored in the wall of the

[1] The seven-note scale is still employed for simple melodies, folk songs *et cetera*.
[2] "Comin' thro' the Rye" and "Ye Banks and Braes" are both in the pentatonic scale.
[3] *Vide* "Australian Aboriginal Songs" Graphophone records, published by the Board for Anthropological Research, University of Adelaide. Recorded and annotated by E. Harold Davies, Mus. Doc. Manufactured by the Columbia Graphophone (Aust.) Ltd.
[4] The Greek tetrachord had three modes—diatonic, chromatic and enharmonic.
[5] Now the Auckland War Memorial Museum, Mr. Gilbert Archey, Director.
[6] In Europe several pitches were and are used such as Classical A = 415 to 429 vibrations, Philosophical A = 427, Continental A = 435, Stuttgart (1834) A = 440, English Concert A = 452 *et cetera*.
[7] Polynesian Mythology, Grey, pp. 68, 110, 174. Edition: The New Universal Library.

cylinder (though not reaching the centre), through which the thong passed when worn. It was sometimes made of wood, but more often one of the arm or thigh bones of a fallen enemy was utilized, it being considered a great degradation to a specially hated enemy to use his bones for this and other purposes.

Carved Wooden Image Playing a *Porutu*.
Rotorua, New Zealand.

Of the *koauaus* which comprise the collection of the Auckland Museum some were unplayable owing to cracks and other causes. From others only one or two notes could be elicited. Only three were in good working order, so I will deal with those. The first I tried was an historical *koauau* supposed to be the identical instrument played on by Tutanekai when he charmed the beautiful Hinemoa with his playing. According to information in possession of the Museum, it was presented to Captain Mair by the Maoris of the Arawa tribe as a token of gratitude for his help in defeating Te Kooti, who attempted to raid Rotorua in 1870. Captain Mair subsequently left it to the Auckland Museum. It is very ancient, and is made of human bone, which, tradition says, was taken from the arm of Murirangaranga, a famous tohunga, who was killed for breaking a tabu during the ceremony of dedicating the young Tutanekai to Tu-matauenga, the Maori god of war. The notes on it are b′, c″, d″, e″, the intervals between the notes being semitone, tone, tone.

The next *koauau* I could get a full scale on is not so ancient as Tutanekai's instrument, but is equally famous and historical, being made from the thigh bone of Peka Makarini, who was Te Kooti's bugler. This individual combined his musical activities with that of an executioner, and is said to have killed at least seventy persons of both sexes before he himself was killed by Captain Mair, who shot him during an engagement near Rotorua in 1870. His bones were collected by his enemies, and made into various objects of art and utility, of which the *koauau* was one. The notes on it are b′, c″, d″, e^{b}″, the intervals between the notes being semitone, tone, semitone.

A very old *koauau* made of human bone, and found near Waimate, Bay of Islands, gave a scale of b′, c″, d″, e^{b}″, the intervals between the notes being semitone, tone, semitone.

The wooden *koauau* (see illustration), which I got near Gisborne, Poverty Bay, is richly decorated with Maori conventional designs carved in relief. The notes on it are b′, c″, d″, e″, the intervals between the notes being semitone, tone, tone.

It will be noticed that the scale on the first and last of these four instruments consists of four notes within the interval of a perfect fourth[8]—a tetrachord. The second and third have their scale within the interval of a diminished fourth (or a major third). We could provisionally call the first and

[8] Another wind instrument in the Auckland Museum collection—a *porutu* from the Urawera country—also had this scale on it, but pitched a major third lower.

last the Maori major mode, and the second and third the Maori minor mode. I would have liked to have tested a larger number of *koauaus*, but there are now not many in existence, and a considerable proportion of those are unplayable owing to age and damage. It is doubtful whether there are any *koauau* players of the old school living, as the modern Maoris have discarded their ancient music, and now use the European scale and harmony. A Maori who played on my *koauau* near the Mokau River held it not vertically, but slightly slanted to the right, and blew into it sideways. He could only produce a couple of notes.

An Old Ceremony Ground of the Cammeray Tribe

(By W. J. Walton)

French's Forest[1] is the name of a large expanse of country in the Manly district, with scenery very much like the mountains. The road round the forest leading into the one from Lane Cove to Barrenjoey is the Mecca of the motorists, and is a favourite route to Palm Beach. Within living memory most of these country roads were only cart tracks, and in those days, before the late Mr. Peter Ellery put his punt at the Spit, Manly's distance to Sydney by road was forty miles. The forest and the country between the coast and the Hawkesbury, including what is now known as the Kuringai Chase, is, in the proper season, a botanist's paradise, for the tablelands and gullies are then ablaze with flowers. In December the hillsides and creeks are splashed with fire by the Christmas Bell (*Blandfordia nobilis*) and the Red Bottle Brushes (*Callistemon lanceolatus*); the sandstone caves house, the pendant nest of the rock warbler (*Origma rubricata*). The whole of this interesting country was once the home of nomadic aboriginal tribes, and presents an intriguing problem to the scientist. Here, quite close to the outer lungs of a great city, is found a virgin field for exploration, with many evidences of primitive art, culture, customs, and religious beliefs of an ancient race, so old that its migration to this continent is lost in the mists of time.

It is regrettable that up to the present little has been done to preserve these old relics for posterity, or, by scientific research, put on record the meaning of much that will soon pass away. The Cammeray ceremonial ground is about ten minutes' walk from the French's Forest Road, where it joins the one from Pymble to Rock Lily. It owes its immunity from destruction to its secluded position. It is an enchanting spot shaded by trees, framed by the sky, this place of striking beauty, the sloping rock where the Kuringai youths were made into men. A stream of the clearest water, purling in its course from rock to rock, has been diverted by the aborigines, by a cut channel, into rock basins used in the man-making ceremonial. Actually these are not of native construction; ages ago they were formed by water which flowed directly over the rock; in the subsequent changes the water has found a fresh channel. It is a proof of the adaptability of the black that he has improved on Nature and converted them to his own use. The centre basin has been rubbed beautifully smooth, the bottom scoured flat as a bath. The

[1] This site has been described by "Bring-ga" in his "Cooee-Talks," and is situated in Duffy's Forest, a portion of the extensive French's Forest Reserve, north of Manly, New South Wales.

water is always running, flowing through the basins into a water hole of wonderful clarity, before it starts its serpentine course through the gullies to Cowan Creek. Between the basin and the water hole is carved a shield. On a higher portion of the rock is carved in broad outline the ancestral deity Baiamee, the creator and lawgiver, once himself a warrior who has been translated to the sky. On his head are the usual radial lines found on a deity. The rites of Baiamee were severe. They were intended to cultivate hardihood, obedience to tribal law and authority, courage in danger; and the painful ordeals the initiate had to face taught him how to bear pain. If he failed and was fortunate to get off with nothing worse, he coud never hope to be looked on as a man. Between the deity and the rock basins are eight large *mundoes* or ghosts' footsteps. Seven of them are going in the direction of the basins, one in the opposite direction towards the high god himself. Close to the deity are two kangaroos, the larger one is transfixed with a long spear; in all probability it represents one of the phases of aboriginal life—the food ceremonial, of which the hunting dance would form a part. The two women figures suggest a woman's ceremonial, perhaps in another place. On one side of the *bora* rock, at the back of the waterhole, is a swampy bit of ground, in many places of little depth. On one of its rock outcrops is a rock basin; its outline is perfect. For some reason of their own the aboriginals surrounded it by a cut channel to convey the water round it. Around its edges are marks that have been cut. A careful survey supports the idea that a great part of this area has, since the natives died out, become covered with soil, therefore it may contain other carvings.

About ten minutes' walk from the basin, in the swamp, is what can safely be described as the most interesting group in the district. The native art galleries for the first time record the Lyre Bird. The place may be, as far as we know, quite unknown. It is a food ceremonial group in which the Lyre Bird is the most unique figure. Its measurement is four feet two, a small boomerang is alongside, the bird is shown as flying from the hunters. Tracks of the bird completely circle the rock. In connection with this there are markings which suggest their main purpose was to serve as a guide to the natives in painting and decorating their bodies for the ceremony. There are totemic figures like the kangaroo, seven feet nine inches long, a flying squirrel, a native cat, a line ending in a circle is shown, a fish with wide-open mouth is close by, so it is perhaps a fishing line.

In their ceremonials, only "made" men were allowed to take part. Here again the newly made ones would receive further instruction in hunting and their duties as men. The food ceremonies were held from time to time to bring about a plentiful supply—in this particular case the Lyre Bird. On important occasions like this a great deal of ritual and chanting took place, after which, in another spot, a corroboree was held, to which all would be allowed to join in. The theme in this case was the hunting and capture of the Lyre Bird.

"MANKIND" BELONGS TO THE SOCIETY.

Articles by members, however brief, providing they possess some degree of interest and merit, will be welcomed.

The Extinct Tasmanians

(By J. S. FALKINDER, Falmouth, East Coast, Tasmania)

(From a paper prepared by Mr. Falkinder, and read before the Society on 17th June, 1930, by Mr. R. H. Goddard.)

PART I.—INTRODUCTION.

IN the year 1876 the last survivor of the Tasmanian aborigines died, and thus passed away a race of people of extraordinary interest to anthropologists. It is rather difficult to conceive that palæolithic men roamed about Tasmania in a primitive state not quite one hundred years ago. He ranged through a country which provided an abundance of game, and searched the rocky shores which produced an almost inexhaustible quantity of edible shell fish. Game, reptiles, insects, with roots and fungi, formed their staple diet. Thus, there survived until modern times a people of mid-palæolithic character. Science has found in these nomads, in a lovely but wild corner of the Pacific, a race and culture supplying links in what we know of Stone Age men. Fate played strange tricks with science, for the early colonial administration of Tasmania failed to appreciate the wealth of information that lay within its grasp. Words cannot express the loss sustained to anthropology, when these interesting people were allowed to pass away without some official record of their customs and practices. It is really difficult to understand the apathy of the authorities of those early days. Some eminent writers and research students have done much to throw light upon the customs and practices of the natives, and there are several excellent publications, but, valuable as they are, they cannot be pretended to be correct. Nearly all the information gathered was obtained from the meagre descriptions given by early settlers. Therefore the opportunity for theories for the student, makes the study of the Tasmanian Aborigines most fascinating and inviting. Before we pass on, it would be well to mention the name of G. A. Robinson, who eventually became the official Protector of the Tasmanian Aborigines. He performed the remarkable task, single handed, of inducing the natives to live in concentration camps. He possessed the confidence and goodwill of many of the head men, and must have obtained a remarkable knowledge of their habits. Unfortunately, such notes that he left were lost in England. He probably was the only man who could have given us a true account of their culture. Despite this loss we owe much to Dr. Milligan for what we know of *Homo Tasmaniensis*. Robinson imparted much information to Dr. Milligan: and Ling Roth, Fenton, Calder, Bonwick and others give excellent accounts in their works. The records of Peron and Labillardiere are interesting, but somewhat imaginative.

During the first twenty years of colonization very little was learnt about the natives in their wild state. It was only when the efforts of the Government were made to gather them into concentration camps that greater interest was taken, but, unfortunately, too late, for, being provided with the facilities of our own civilization in their camps, they soon forgot their primitive arts. Of the use of their stone implements little is known.

PART II.—ORGANIZATION.

Ling Roth has divided the tribes of the Tasmanian race into eight divisions which seem to indicate that he was guided by the physical features of the country. Four dialects were known by Dr. Milligan, and this fact seems to indicate that some of the tribes, as described by Ling Roth, may have been

sub-tribes. The four dialects evolved in the following parts of Tasmania: North-east Eastern and South-eastern, Central and North-western, and Western. There was apparently a low form of tribal control, for many of the sub-tribes were known to be hostile to each other, but there must have been some form of main tribal recognition. This fact has been suggested to me by the geological character of their stone implements, combined with native names given to localities and known native trails into the interior.

I find it convenient to divide the tribes into the following divisions:

(1) Southern tribes—which included tribes about the Lower Derwent, Bruni Island, Recherche Bay, and Southern Tasmania.
(2) Western tribes—the North-west tribe and Western tribe.
(3) Central tribes—the Oyster Bay tribe and Big River tribe.
(4) Northern and North-eastern tribes.—These included the Stony Creek tribe, the Port Dalrymple tribe, Cape Portland tribe, and Ben Lomond tribe.

The following is a quotation made by G. A. Robinson in a speech delivered in Sydney in 1838:

"That he had necessarily learnt four languages to make himself understood by the natives generally. But, as regards nations, he could truly say that the island was divided and subdivided by the natives into districts and contained many nations. Their divisions he intended at some future time to point out, as he intended to execute a map of the island on aboriginal principles, with the Aborigines' names for mountains, rivers and districts."

This map, if made, was lost with the rest of Robinson's papers.

The population of the Aborigines, as estimated at the advent of Europeans, varies greatly and has been computed from 2,000 to 8,000 by different writers. A figure probably below 5,000 would be nearer the mark. I give this estimate as the result of observations of camp sites practically all over Tasmania.

Their nomadic habits, and crude methods of living, would not permit parties of more than one hundred congregating together for more than a short period. It is probable that only small numbers lived permanently together. In early records settlers have stated that parties up to 200 were seen. It is probable that they would be large hunting or war parties gathered for special tribal reasons. The numerous fires of the equally numerous small parties, would give the impression of greater numbers. Early navigators reported extraordinary numbers of fires along the coast. This would account for the supposed "large population" of the Aborigines. Upon reflection, when one becomes acquainted with local conditions, the supplies of food on the coast could not have supported the thousands stated in early reports. Certainly, the supplies of shell fish and game, together with such other food that they procured, were never wanting, but the area of the country and the size of their middens preclude the thought that the population was great.

On the West Coast of Tasmania, and certain inland places, there were semi-permanent camps, and the system of living was entirely different, due to abnormal conditions. The dense bush of the West Coast confined the western tribes to a thin strip of the coast, but, by way of compensation, there was provided larger quantities of food in this littoral than elsewhere, consequently, except for reasons of sanitation, life was more settled. Here rude villages were constructed, which semed to have been a little more substantial than the "lean-to's" usually made to ward off the piercing winds.

Describing these conditions on the West Coast, R. W. Legge, in a paper to the Royal Society of Tasmania, says, in effect, "a very interesting feature of the Bluff Head Camp on the West Coast, are the shallow saucer-like depressions, numbering seven or eight,

situated around the summit of the great dune. Some of these depressions are about 18 inches deep, with an average diameter of 9 feet, and one is led to the conclusion, after examining these peculiar hollows and digging into them, that they were scooped out by the natives, to be covered with a rude stick and bough shelter. These depressions do not appear to be the result of wind erosion, and if one digs down, there will be found the blackened sand and charcoal of countless fires, intermixed with charred shells and bones."

J. F. Jones, of Burnie, Tasmania, intends to photograph these depressions and excavate, taking measurements of each layer of deposit. This development will be awaited with interest. Jorgensen refers in his memoirs to native villages made of wattle boughs, which were of a higher type than the breakwinds generally used. Calder relates having seen bark huts, supported upon sticks driven into the ground; the bark was adorned with several rude charcoal drawings, one representing a kangaroo of unnatural proportions, another an emu; a third was an animal, and a fourth was a battle scene with men dying and flying all over it. There is no doubt, from evidence remaining to-day, and records referred to, that there was a communal development. The Tasmanian, on this account, may be allowed a higher place in the scale of culture than generally conceded. Some authorities are too much inclined to under-estimate the state of these people, and have assigned the Tasmanians a place in the lowest palæolithic order. It will be noted that the evidence of semi-permanent camps was a step of improvement amongst a race of food gatherers. Yet it would not do to place too much valuation on this indication, as climatic conditions may have hastened this phase, and would thus give a misinterpretation of their general culture. The camps on the East Coast were much more suitable for the original condition of camp life; the climate was decidedly milder, and shelter could nearly always be secured against the prevailing winds. It is a feature in this part of Tasmania that the camps nearly all faced the north-east or south-east. The East Coast camps were more extensive than elsewhere. The interior camps were not so profuse in remains, on account of the absence of shell fish. Artefacts and bone remains are the only traces of occupation. Implements have been found in every part of Tasmania, and suggest that the natives must have traversed the whole island. The camps on the coast abound in remains of shell fish. The most noticeable are oysters, mutton fish, whelks, clams, warriners and cockles. Crayfish were highly prized. There are no records that they ate scale fish, nor were there any known methods by which they could catch them. This is an extraordinary fact, as there is evidence that they did eat marine mammals. Marsupials and emus were hunted, and, as stated before, reptiles and insects were commonly consumed. For vegetables, they indulged in the frond and pith of Man Fern, native potato (*Gastrodea sesamoides*), native bread (*Mylitta polyporus*), a fungus found in the ground; and certain other fungi found in trees. The natives excelled in the chase for game, and were also expert swimmers. The women were almost amphibian in their skill in diving. It was left with the young women and children to dive for the shell fish and crustaceans, and they were able to remain under water for an extraordinary length of time, gathering their food in baskets made of reeds. These baskets were tied round in front by a circle of cord, and hung behind the back. On land they were well acquainted with plant life, like all peoples who lived closely to nature. When possible they cooked their food. It has been stated that the custom prevailed amongst them that some would only eat the male of the particular species, others only the female, and that they would rather go without than infringe this rule.

Animals were thrown on the fire until their hair was singed, after which the entrails were extracted, and the carcase returned to the fire until roasted. Shell fish were also roasted. The mutton fish were placed on the embers and then cooked in the shell.

For the description of the people themselves, nothing could be better than describe what James B. Walker says of the aborigines of Van Diemen's Land:

"Both sexes are stout, and their limbs well proportioned; few inclined to corpulency. They walk remarkably erect, assuming a dignified mien . . . their complexion is very dark, almost black; a few are of lighter hue, approaching to the colour of copper. The soles of their feet are as light as those of Europeans who go without shoes. The palms of their hands are also much lighter than their bodies. There is a considerable variety of features among them. Generally, thick lips and flat distended nostrils are the characteristics of the race. Many of their countenances are pleasing, and very few of them forbidding; one man with a black beard and moustache had a countenance strikingly Jewish. Their hair is uniformly black and woolly, like the African Negro, whom, in many respects, they nearly resemble. In their savage state the men let their hair grow and ornament it with grease and red ochre, or, as they term it, balldowinny. The women shave their heads. Neither sex wears any clothing,[1] unless a few strips of fur, which are sometimes tied round the thickest part of their limbs, can be called such. Both sexes wear strings of shells as necklaces. The shells are of spiral form, and in their natural state not remarkable for beauty, but when the outer coating is stripped, show varied colours of considerable brilliancy. The aborigines prepare them for use by burning grass over wood embers when the action of the pyroligneous acid removes the thin coating from the shell. Some of their necklaces were formed of kangaroo sinews, one twisted round another so as to resemble braid, and then dyed with red ochre, their favourite colour, and hung in several folds around their neck."

"They are fond of smearing their bodies with grease and red ochre, which enables them to bear with the more ease exposure to the weather. They make incisions in their flesh, particularly on the thighs, arms and breast. This is done with a sharp flint, so as, generally, to form longitudinal lines parallel to each other. The wounds are kept open by artificial means. These marks are rendered more numerous by a custom of lacerating any part of their bodies affected with pain. This they supposed to be productive of relief. The bones of deceased relatives they wear as tokens of remembrance and connect some superstitious notion evidently regarding it in the light of a charm."

The western tribes appear to have generally practised burning their dead. The body was placed in an upright position on logs of wood and additional logs were piled around until the superstructure assumed a conical form. The pile was then fired and replenished with fuel until the body was reduced to ashes. These were carefully collected by the relatives of the deceased and tied up in a piece of kangaroo skin and worn as tokens of remembrance. They were fond of corrobories, in which they indulged in singing and dancing. As their language was melodious, due to the frequent recurrence of vowels, their singing was pleasing and not unmusical. In dancing they imitated animals and birds, and had a thunder-and-lightning dance.

(*To be continued.*)

[1] *Note.*—M. Peron states: "All the women, with the exception of kangaroo skins, which some of them carried over their shoulders, were uncovered."

Elements of Flaking and Chipping

BEFORE the use of metals was discovered, man depended largely upon stone to supply material for his implements and weapons. The prehistoric peoples of Europe, Asia, and America used stone, and there are some races living to-day who depend upon it for the purposes indicated. The Australian Aborigines were skilled workers in stone, and, by reason of the number and variety of their artefacts, we can in a measure follow the development

of their lithic culture. From the simple flake, to the more complex or specialised implement, it is an almost continuous story. On account of their peculiar fracture, siliceous or flinty stones lend themselves admirably to the practice of flaking and chipping. These stones have what is termed a conchoidal, or shell-like fracture. That is, they break with a mathematical curve. This curve is inclined towards the opposite face of the mass, so that, when well directed percussion takes place, a sharp edge is normally produced. Conchoidal fracture is more pronounced in some forms of siliceous material than in others. By reason of the hardness and behaviour of the material, it was both difficult and unnecessary to resort to grinding flaked implements, though they are often found side by side with axes and knives which have been, in their manufacture, subjected to abrasive treatment. Flakework is produced by two distinct processes, namely, flaking and chipping. The first consists of the removal, by *percussion* with a hard pebble, a flake, or flakes, from a mass of stone. In the manufacture of a large implement, such as a chopper, reduction and shaping were similarly acquired. On account of the size of some flaked implements, the initial impact must have been considerable. In flaking, the mass or core was embedded in one hand, or rested upon a stone anvil. Simple flakes removed in this way were often used as knives and scrapers. Chipping is a much more delicate process. The cutting, or other working edge, was trimmed, serrated, or made rugged by *pressure*. This was variously done with a piece of wood, bone, or stone, and, in some cases, with the teeth. Some varieties of aboriginal flaked implements are highly specialised. While many flakes would be struck off, used, and discarded, there are quite a large number showing extensive and elaborate fashioning. Where the material was scarce, or hard to acquire, the working edges often show evidence of repeated retouching. The remaining "core," or nucleus, was sometimes used as a crude implement. —Copy of label in the Australian Museum, 1931.

Aboriginal Methods of Assassination

(By W. W. THORPE)*

ASSASSINATION was sometimes practised by the Aborigines of Australia. Perhaps infringement of tribal law or custom merited this fate, but more often it was just a matter of private vengeance.

The "strangling-cord" and the *werpoo* were the instruments used. The cord was made of very strong material. One end was attached to a pointed bone and the other terminated in a loop. Great care was exercised in approaching the doomed man. The intended victim would be sleeping peacefully, while his assassin would stealthily creep up, pass the bone and cord under his neck as he lay on the ground. When the moment arrived for the threading the bone through the loop the killer moved very quickly. He passed it through, drew it up tightly and held on while the victim struggled and died.

The *werpoo* is made entirely of bone, usually the fibula of a kangaroo or emu. It is broad and almost knobby at one end, but tapers away to a very slender point, which is slightly bent after the fashion of a sailor's needle. It is ten to fifteen inches long and used for no other purpose than that

* By permission of the Trustees of the Australian Museum.

of assassination. It is highly effective and, on account of the way it is used, leaves no trace of the injury. Unlike the strangling-cord, it takes two men to use it. When the *werpoo* possessor intends to take life he selects a tribesman in whom he can trust. Having stalked their man they rush in and seize him in such a way that he cannot call out, and throw him on his back. The killer's companion sits astride the victim while the other inserts the *werpoo* under the skin, and slowly but steadily forces it along the body for some distance until it is in line with the heart. Then it is deftly turned inwards, pierces that organ and is slowly withdrawn. As it leaves the wound the puncture is pressed together by the forefinger so that the point of entry is practically indiscernible. The idea behind the *werpoo* method is the belief that it prevents the spirit leaving the body and haunting the killer.

One of our members, Rev. A. J. Barrett, was fortunate in finding a *werpoo* in a midden at Woonona, near Bulli, N.S.W. It has been presented to the Australian Museum.

Primitive Art in Australia

(By B. L. HORNSHAW.)

ALTHOUGH we have no wild tribes in New South Wales today, a fact which, from an anthropological point of view, is greatly to be deplored, there are still to be found a great number of interesting records of their strange beliefs and customs. These, if the key to their meaning could be found, would unravel the mystery of many of their primitive ceremonies. I refer to aboriginal art, and believe that nothing stimulates the mind more than the study of these interesting relics of the past.

In my wandering through the bush I have found many crude "art galleries." These unique specimens of native art can be divided into three classes: (1) Rock carvings or petroglyphs, (2) stencillings and pictographs, (3) tree carvings or dendroglyphs. (1) and (2) are mostly found along the eastern coast of this State, and (3) inland in the western districts. They are meant to portray totemic, ceremonial and realistic subjects. Totemic carvings are based on the idea of the Great Ancestor, represented by the totem of certain divisions of the tribe, and, as such, the totem animal dominates all others. Some of their deities are depicted with distorted hands and feet, others with heads like various animals.

Rock carvings are generally found on large flat surfaces of Hawkesbury sandstone, mostly overlooking fine scenic views. On these *bora-nores* the primitive artists have carved some wonderful designs; a representation of "Baiamee" usually holds pride of place, sometimes with many footprints, or *mundoes*, leading to it. Often we find a group of birds, mammals, fish and reptiles surrounding the ancestral figure: also the various weapons used by the ancient hunters are sometimes depicted. Some of these "pictures" are thirty feet long, others are very small. Associated with them are geometrical designs of straight, curved or angular lines, which may be classed as religious emblems.

Stencilling is the outlining of an object with a mixture of ochre, charcoal or white clay, mixed with fat or human blood. In most cases the object delineated is the hand, but I have seen feet, weapons, and fish portrayed. Red

hands, which are fairly common in this country, have their similarities in other parts of the world, and resemble some of the paintings and drawings found in the caves of France and Spain, and are worthy of comparison with the pictographs so well portrayed by the bushmen of South Africa. In the delineation of the tracks of animals and birds, the dusky artist excelled, for they are true in every essential detail.

Tree carvings are quite distinct from rock carvings and stencillings. Many grotesque designs are cut deeply into the trees; some are very roughly done, while others show finer detail. Carved trees usually denote a *bora* ground, or a place of burial.

Objects are also drawn upon the bark of trees, while some of the Kimberley blacks are experts at carving unique designs on baobab nuts. Many of their weapons display no mean skill regarding primitive art, and some of their message sticks are a credit to the Stone Age men who made them.

It is doubtful if the meaning of native art existing in this country will ever be discovered, but its abundance seems to prove that it is intentionally a record, and not the work of idle hands as some anthropologists claim. As the meaning of the message stick was understood, so the signs and symbols at the *bora* grounds proclaimed their importance to the initiated. In such a way the Aborigine carried his life's history upon his body for every man to read. His totem and the number of degrees he had taken were plainly inscribed. His lubra carried her marriage lines and the number of her children registered on her body by scars. Having so carefully recorded the history of each member of his family, it is reasonable to assume these primitive people made an effort to leave behind them a record of events, carved or painted on trees and rocks, for future generations to read. When we consider what a small amount of labour the Aborigine devoted to his habitations, clothing, ornaments and cooking utensils, it is surprising how much time he has given to art.

MANKIND.

"It is dangerous to show man too plainly how like he is to the animals, without at the same time reminding him of his greatness. It is equally unwise to impress him with his greatness and not his lowliness. It is worse to leave him in ignorance of both. But it is profitable to recognise both facts."—PASCAL.

Anthropological Notes, News and Personalia

Last year the Rev. Whonsbon Aston drew the attention of the Waverley Municipal Council to the advisability of protecting the aboriginal rock carvings at Merriverie, North Bondi. Early this year a letter was sent to the Society by the Waverley Council, containing information that a sum of money had been set apart for the purpose of erecting a barrier around the carvings, and advice of the Society was sought as to the most suitable form of barrier to be built. The required advice was sent by our Hon. Secretary.

* * * *

We are sorry to announce that the Rev. Whonsbon Aston will be leaving Sydney by the *Aorangi* on the 2nd April, to take up the Incumbency of the Anglican Church, Levuka, Fiji. He will be absent for three years.

* * * *

Professor A. Radcliffe Brown, our Past President, will be leaving Sydney by the *Sonoma* on 30th May, to deliver a series of lectures at Columbia University, Chicago. He will then proceed to London, where he will be President of the Anthropological Section at the Centenary Meeting of the British Association for the Advancement of Science.

* * * *

Our Hon. Treasurer, Mr. R. H. Goddard, has generously presented the Society with a stock of printed folders containing a list of officers and members for the year 1930-31. He has also donated a number of booklets of our Constitution and By-laws, which have yet to be distributed.

* * * *

We hope to welcome back shortly our Past President, Professor A. N. Burkitt, who has been abroad.

* * * *

The Rev. A. J. Barrett is still enthusiastically collecting flake-work on the South Coast. He has achieved the honour of extending the range of the *eloeura* as far south as Eden. This implement is now known from Port Macquarie on the north to Twofold Bay on the south.

* * * *

Early this year Mr. Carlyle Greenwell organized an expedition to the South Coast for the purpose of investigating "middens," and gathering artefacts. He was accompanied by Messrs. R. W. Halliday and W. W. Thorpe. A base was made at Bateman's Bay, from where work was carried out as far south as Bermagui.

* * * *

Mr. Robert Turner has been elected a Fellow of the Royal Anthropological Institute, London. He is concentrating on stone implements, and recently showed us some very representative flake-work, which he and his party collected in the vicinity of Lake Illawarra.

* * * *

We have been given to understand that the collection of the late Edmund Milne has been safely deposited at Canberra and will form the nucleus of a Federal Anthropological Collection.

* * * *

The Society hopes for a speedy recovery of two of its esteemed members, Dr. Harold Norrie and Mr. R. G. Niall, who are still on the sick list.

* * * *

Mr. John Powell recently conducted a motor party, consisting of Captain Watson, of the Royal Australian Historical Society, Mr. W. W. Froggatt, entomologist, and our Hon. Secretary, to the northern head of Broken Bay. It was a quest to ascertain if aboriginal rock carvings occurred in that locality, but none were discovered.

* * * *

The Committee is desirous of augmenting its funds, both for the purpose of continuing the publication of MANKIND, and the prosecution of anthropological work. Hitherto expenses have been borne by individual members, but there yet remain many fields of research, notably rock carvings and middens, for the investigation of which money will be needed. Donations for the above purposes will be welcomed. Towards the publication of MANKIND we gratefully acknowledge one guinea from Mr. J. S. Falkinder, and five pounds each from Mr. H. J. Wright and the Hon. Secretary.

* * * *

This month Mr. Keith Kennedy delivered lectures on Primitive Music at the Beecroft, Neutral Bay and Wahroonga Music Clubs. He also gave a violin lecture-recital at the King's Hall on Music of the Gipsies.

* * * *

The library of the Society is now an established fact, by the transfer of 84 volumes, published by the Bureau of American Ethnology, formerly the property of the late Royal Anthropological Society of Australasia, of which the present Society is the logical successor. Thanks are due to the Royal Australian Historical Society, which held the volumes in trust, and this year handed them over to us. Other publications received are: "Men of the Old Stone Age," by Osborne, the gift of Mr. D. Raymond; "Somatical Investigation of the Javanese," by Dr. J. H. Nyessen, and Bulletin No. 3

of the Netherlands Indian Science Council, from the Anthropological Laboratory of Java; *Quetzalcoatl*, official organ of the Society of Anthropology and Ethnology of Mexico; Monograph of the Tarahumaras by Carlos Basauri, from the same Society; "Aboriginal and South Sea Island Implements," from Tyrrell's Museum, Sydney.

* * * *

Mr. E. Pearson Chinnery, Government Anthropologist for the Mandated Territory, is in Sydney. Members of our Society recall to mind the interesting lecture on Natives and Government of the Mandated Territory, N.G., he favoured us with last year.

* * * *

Dr. D. S. Davidson, of the University of Pennsylvania, called on us recently. He intends to stay in Sydney a few months before returning to U.S.A. He has been doing original investigation in the Far North under the ægis of the Rockefeller Foundation.

* * * *

During the Exhibition to be held at Maroubra, to commemorate the opening of the Harbour Bridge, it is proposed to bring some full-blooded Aborigines from the interior and the north. Anthropologists, and scientists generally, will welcome this as an opportunity to further their studies of our interesting autochthones.

In his characteristic way, the Rev. E. R. B. Gribble is doing good work amongst the natives on the coast and islands within the Great Barrier Reef, north Queensland.

* * * *

In addition to many geological specimens, Mr. Thos. Hodge-Smith, of the Australian Museum, gathered some representative aboriginal flaked implements during his visit to Central Australia.

* * * *

Our Vice-President, Dr. H. S. Halcro Wardlaw, is still abroad.

* * * *

During the Christmas vacation Messrs. M. S. Stanley and T. H. Pincombe motored down the coast and inland. We believe that several axe heads of the Neolithic type were found at different spots *en route*.

* * * *

Mr. K. M. Cobb has a very interesting collection of aboriginal stone implements from the Darling River area. One of us recently spent a pleasant evening at his home inspecting them.

* * * *

A fine mounted and framed exhibit of the nardoo plant (*Marsilea drummondi*) has been presented to the Australian Museum by Mr. F. G. Goddard. Included with the specimen is the seed and prepared meal as eaten by the Aborigines.

Wholly set up and printed in Australia by THE AUSTRALASIAN MEDICAL PUBLISHING COMPANY, LIMITED, Seamer Street, Glebe, Sydney, N.S.W.